

AMENDMENTS TO THE CLAIMS

1 – 9. Cancel

10. (Original) A method of facilitating estimation of propagation channels between a first number of transmitters and a lesser number of receivers, the method comprising:

transmitting information signals for said receivers jointly from said transmitters based on propagation channel estimates, such that interference between information signals is reduced at each said receiver; and
transmitting a number of dummy pilot signals equal to a difference between the number of transmitters and receivers, such that said dummy pilot signals cause substantially no interference in reception of said information signals by said receivers when said propagation channel estimates substantially match said propagation channels.

11. (Previously Presented) The method of claim 10, further comprising, for each said dummy pilot signal transmitted, calculating propagation channel estimates for a virtual receiver location corresponding to said dummy pilot signal.

12. (Previously Presented) The method of claim 10, further comprising choosing said virtual receiver location to be a location relative to said transmitters such that reception of said dummy pilot signal jointly transmitted by said transmitters would be strongest.

13. (Previously Presented) The method of claim 12, wherein propagation channel estimates for each said receiver relative to said transmitters comprise a channel estimate vector, and wherein

choosing a virtual receiver location comprises determining a supplemental channel estimate vector orthogonal to said channel estimate vectors of said receivers.

14. (Previously Presented) The method of claim 10, further comprising forming said propagation channel estimates into a channel estimate matrix comprising a matrix column for each said transmitter and a matrix row for each said receiver, such that a matrix element represents propagation channel estimates between a given transmitter and a given receiver, and wherein each said matrix row comprises a channel estimate vector.

15. (Previously Presented) The method of claim 14, further comprising making said channel estimate matrix square for use in pre-filtering said information signals and said dummy pilot signals before transmission by supplementing said channel estimate matrix based on adding supplemental channel estimate vectors as additional matrix rows, wherein each supplemental channel estimate vector corresponds to one of said dummy pilot signals being transmitted by said transmitters.

16. (Previously Presented) The method of claim 15, further comprising computing said supplemental matrix rows to be orthogonal to said channel estimate vectors for said receivers.

17. (Previously Presented) The method of claim 15, wherein transmitting information signals for said receivers jointly from said transmitters based on propagation channel estimates comprises pre-filtering said information signals based on said channel estimate matrix such that each transmitter transmits a weighted combination of said information signals, and wherein said weighted combinations of said information signals combine at each said receiver to substantially cancel the information signals for the other receivers.

18. (Previously Presented) The method of claim 17, wherein transmitting a number of dummy pilot signals equal to a difference between the number of transmitters and receivers comprises pre-filtering said dummy pilot signals based on said channel estimate matrix, such that said dummy pilot signals substantially cancel at each said receiver, and wherein an amount of interference caused by said dummy pilot signals at each said receiver is a function of mismatch between said propagation channel estimates for that receiver and the actual propagation channels to that receiver.

19. (Previously Presented) The method of claim 18, further comprising:

determining dummy pilot signal interference at said receivers; and
adjusting said propagation channel estimates based on said determined dummy pilot signal interference.

20. (Original) A method of estimating propagation channels between a number transmitters and a lesser number of receivers, the method comprising:

initializing a set of propagation channel estimates for said propagation channels;
generating a number of dummy pilot signals equal in number to a difference between said number of transmitters and receivers;
determining supplemental propagation channel coefficients for each said dummy pilot signal based on said propagation channel estimates intended to cause said dummy pilot signals to substantially cancel at each said receiver, thus causing no interference at said receivers;
pre-filtering said dummy pilot signals and an information signal for each said receiver using said propagation channel estimates and said supplemental propagation channel estimates;

transmitting said information signals and said dummy pilot signals jointly from said
transmitters to said receivers after said pre-filtering; and
adjusting said propagation channel estimates based on observed dummy pilot signal
interference at said receivers.

21 – 29. Cancel